

Definition

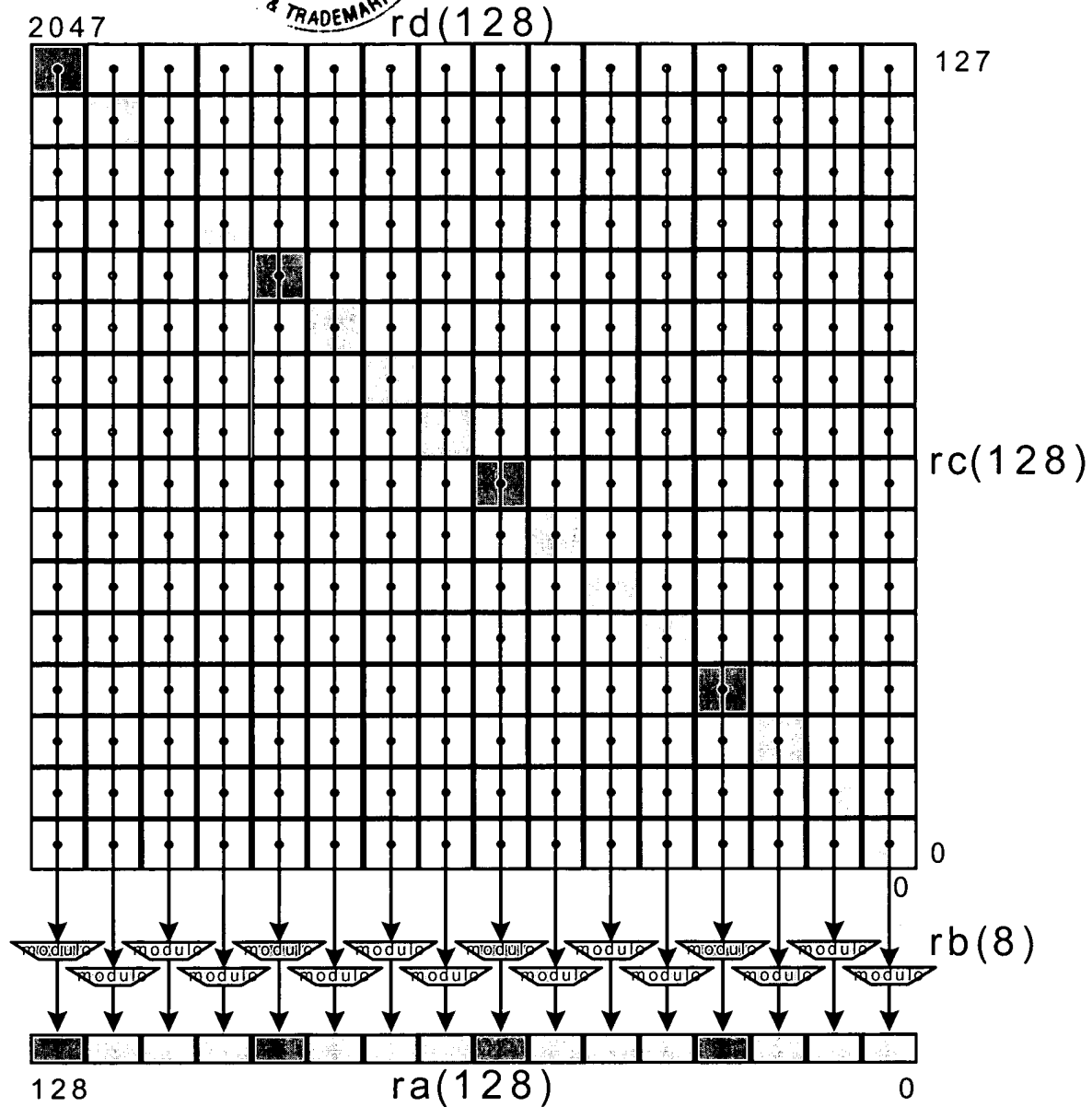
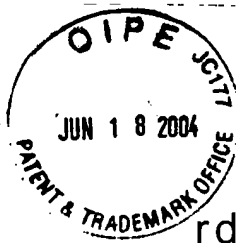
def GroupTernary(op,size,rd,rc,rb,ra) as
 d ← RegRead(rd, 128)
 c ← RegRead(rc, 128)
 b ← RegRead(rb, 128)
 case op of
 G.MUX:
 a ← (c and d) or (b and not d)
 endcase
 RegWrite(ra, 128, a)
enddef

Exceptions

none

Fig. 31E





Ensemble multiply Galois field bytes

Fig. 42D

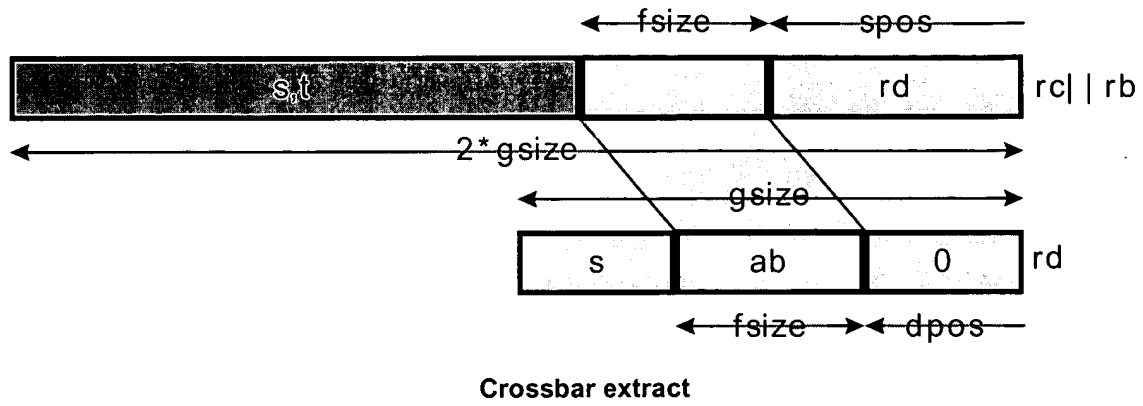


Fig. 44C

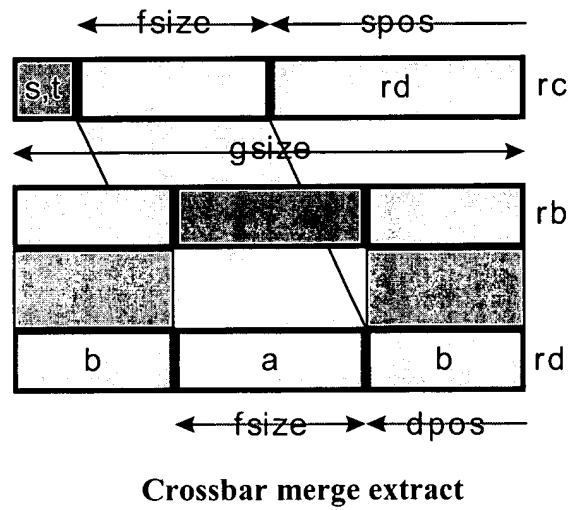


Fig. 44D

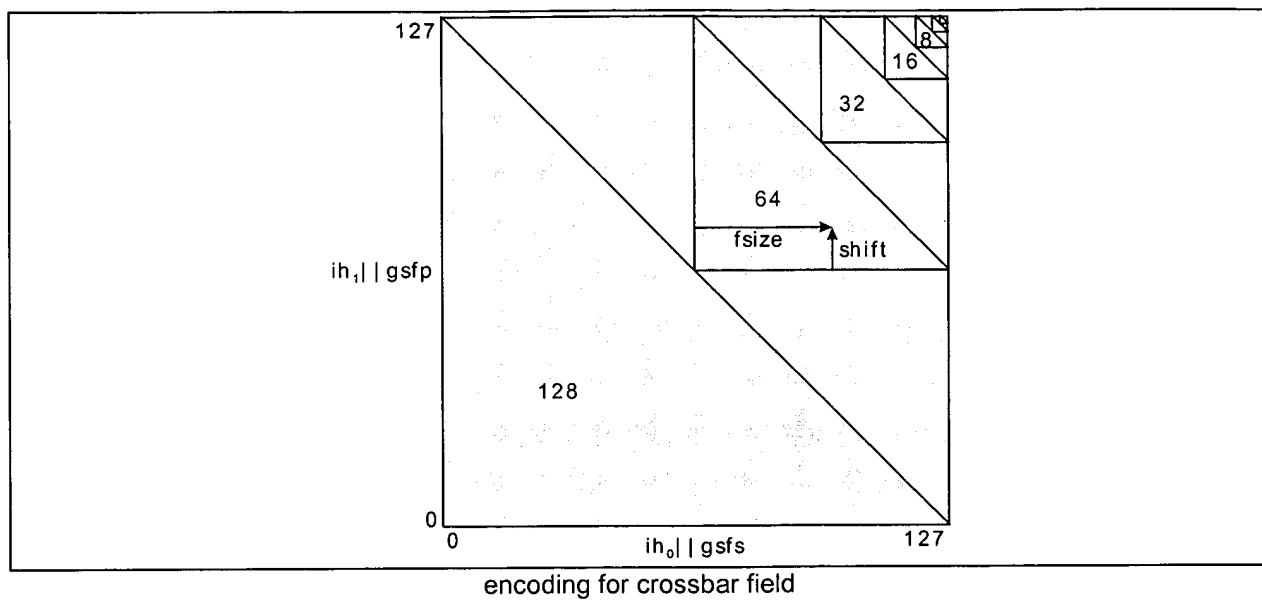


Fig. 45D

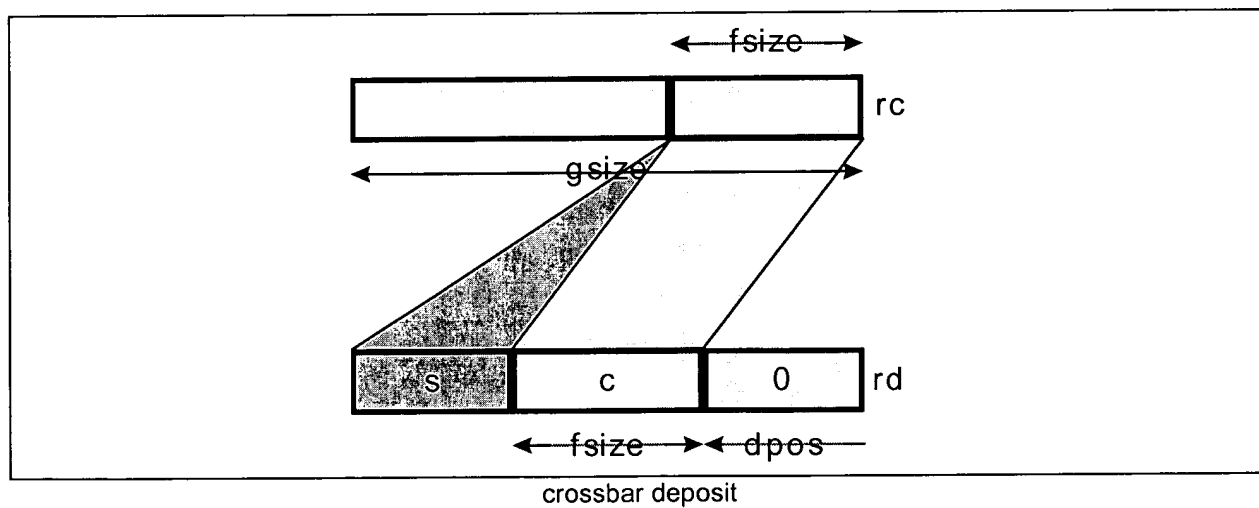


Fig. 45E

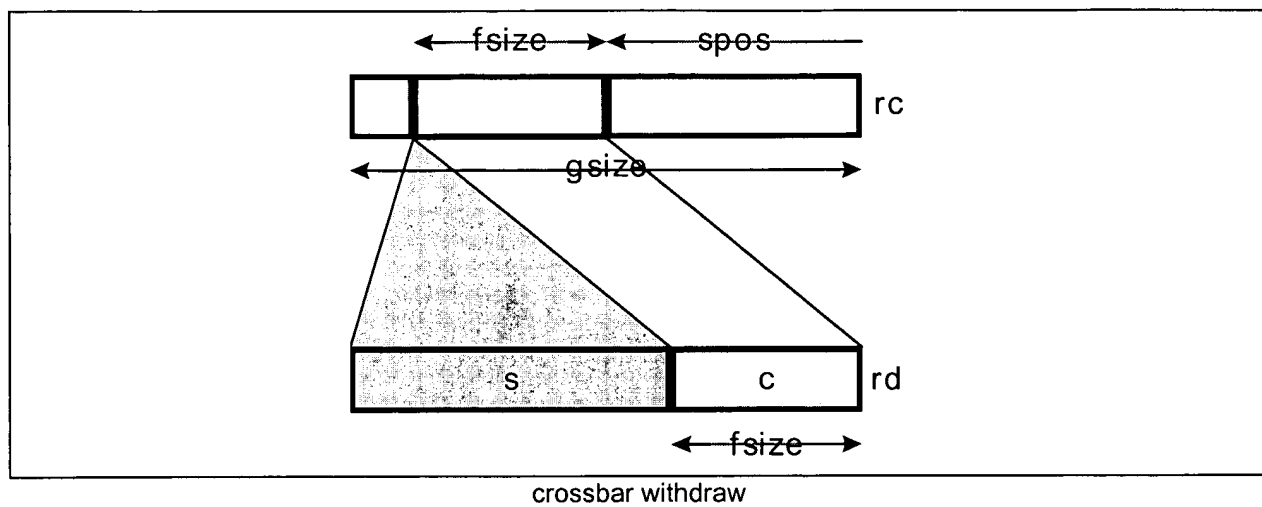


Fig. 45F

Operation codes

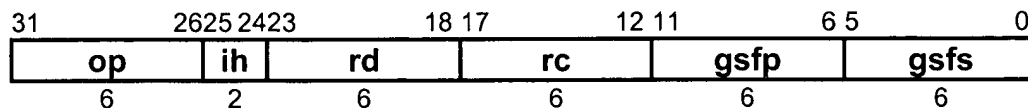
X.DEPOSIT.M.2	Crossbar deposit merge pecks
X.DEPOSIT.M.4	Crossbar deposit merge nibbles
X.DEPOSIT.M.8	Crossbar deposit merge bytes
X.DEPOSIT.M.16	Crossbar deposit merge doublets
X.DEPOSIT.M.32	Crossbar deposit merge quadlets
X.DEPOSIT.M.64	Crossbar deposit merge octlets
X.DEPOSIT.M.128	Crossbar deposit merge hexlet

Fig 45G

Format

X.op.gsize rd@rc, isize, ishift

rd=xopgsize(rd,rc,isize,ishift)



assert isize+ishift ≤ gsize

assert isize ≥ 1

ih₀ || gsfs ← 128-gsize+isize-1

ih₁ || gsfp ← 128-gsize+ishift

Fig 45H

Definition

```

def CrossbarFieldInplace(op,rd,rc,gsfp,gsfs) as
  c ← RegRead(rc, 128)
  d ← RegRead(rd, 128)
  case ((op1 || gsfp) and (op0 || gsfs)) of
    0..63:
      gsize ← 128
    64..95:
      gsize ← 64
    96..111:
      gsize ← 32
    112..119:
      gsize ← 16
    120..123:
      gsize ← 8
    124..125:
      gsize ← 4
    126:
      gsize ← 2
    127:
      raise ReservedInstruction
  endcase
  ishift ← (op1 || gsfp) and (gsize-1)
  isize ← ((op0 || gsfs) and (gsize-1))+1
  if (ishift+isize>gsize)
    raise ReservedInstruction
  endif
  for i ← 0 to 128-gsize by gsize
    ai+gsize-1..i ← di+gsize-1..i+isize+ishift || ci+isize-1..i || di+ishift-1..i
  endfor
  RegWrite(rd, 128, a)
enddef

```

Exceptions

Reserved instruction

Fig 45I

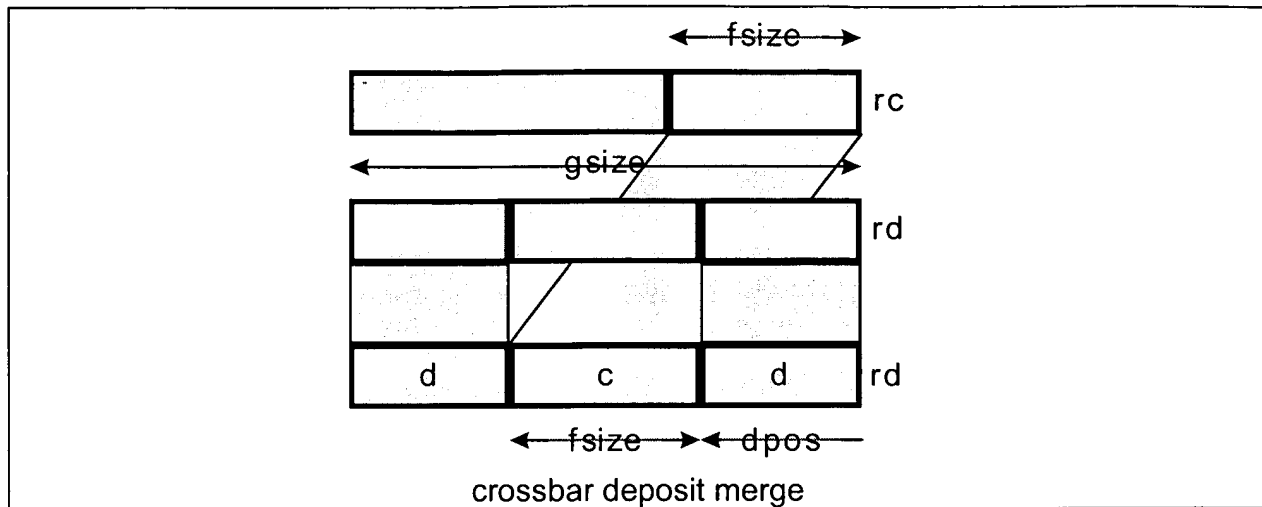


Fig 45J

Operation codes

G.MUX	Group multiplex
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Redundancies

G.MUX ra=rd,rc,rc	⇔	G.COPY ra=rc
G.MUX ra=ra,rc,rb	⇔	G.BOOLEAN ra@rc,rb,0x11001010
G.MUX ra=rd,ra,rb	⇔	G.BOOLEAN ra@rd,rb,0x11100010
G.MUX ra=rd,rc,ra	⇔	G.BOOLEAN ra@rd,rc,0x11011000
G.MUX ra=rd,rd,rb	⇔	G.OR ra=rd,rb
G.MUX ra=rd,rc,rd	⇔	G.AND ra=rd,rc

Format

G.MUX ra=rd,rc,rb

ra=gmux(rd,rc,rb)

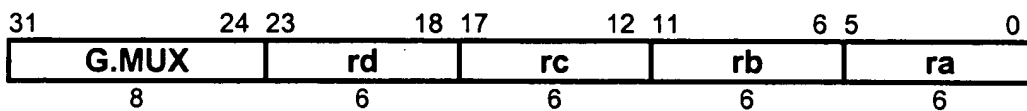


Fig. 31D



Definition

```
def GroupTernary(op,size,rd,rc,rb,ra) as
  d ← RegRead(rd, 128)
  c ← RegRead(rc, 128)
  b ← RegRead(rb, 128)
  case op of
    G.MUX:
      a ← (c and d) or (b and not d)
  endcase
  RegWrite(ra, 128, a)
enddef
```

Exceptions

none

Fig. 31D